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AGRICULTURAL RECONSTRUCTION IN CHINA . . . . .

By Owen L. Dawson *

Agricultural-reconstruction measures in China offer possibilities for increasing the quantity and quality of agricultural products and improving the welfare of the people so that China can make the desired contribution to world economic post-war reconstruction.

The rate of progress depends much on the policy of the Central Government in boldly attacking problems it has long recognized but upon which it has been unable to act effectively because of having only a short decade in which to achieve results before the advent of Sino-Japanese hostilities in 1937. However, owing to the immensity of the problems and the speedy progress necessary, coupled with depleted resources and insufficient personnel, outside aid can definitely help to achieve desired goals.

Efforts toward industrial organization should not overshadow agricultural-improvement measures, since these must be prerequisite to any permanent large-scale industrial development. The importance of rehabilitating agriculture in China is indicated by the position of agricultural products in China's exports for the immediate pre-war period. In 1935 China's agricultural exports were valued at $168,000,000 and its agricultural imports at $67,000,000. Agricultural products represented at that time 80 percent of total exports. In addition, agriculture furnished large amounts of raw products for domestic industry.

In the post-war period agriculture will be called upon to furnish a larger quantity of products as well as manpower for industry. Larger agricultural exports will be needed to pay for expanded industrial equipment. If this required expanded output of agriculture is to be realized, it seems necessary to raise the pre-war low standard of living among farmers. This is especially true because of severe conditions experienced in large sections since tne war began in 1937. A tendency has been noted, however, in recent discussions of a post-war program of industrialism, to emphasize economics in the consumption of consumer goods.

BASIC PROBLEMS OF CHINESE AGRICULTURE

China is still predominantly an agricultural country. The 80 years of industrial development in China, largely under foreign initiative, have made only a dent in its rural character. It has been estimated that almost 80 percent of the country's 400 million people depend upon the land for their livelihood. In normal years the agriculture of the country is called upon, not only to supply food for its large population and raw materials for its principal industries, but also to be responsible for nearly 80 percent of the export trade. In short, agriculture is the pivot around

* Agricultural Commissioner and Agricultural Attaché in China, 1931-1941.

FIGURE 1.—Map of China showing principal cropping areas.

which the economic life of China revolves. But the vast majority of China's agricultural population remain on a low standard of living.

The fundamental rural problems of China result from many natural and inherited causes, chief of which are: (1) Density of population in relation to soil resources depleted by cropping and erosion; (2) periodic floods and droughts; (3) poor communications; (4) uneconomic systems of land tenure; (5) high cost of credit facilities; (6) inequitable taxes; (7) lack of improved varieties of plants and breeds of stock; (8) ravages of plant and animal pests; (9) lack of sufficient implements and fertilizer; (19) unsympathetic state and local administrations and exactions of middlemen; (11) poor health and educational facilities.

The country's production capacity is limited, due to deficient rainfall and periodic floods. The rough topography of parts of the country, poor and exhausted soil due to long cropping, and erosion have further restricted output. Returns per person are low, not only because of the density of population and limited fertility, but also because of lack of improved varieties and the ravages of plant and animal pests and diseases. Lack of sufficient implements and artificial fertilizer also limit yields. Moreover, on the economic side there have been many defects, the principal being meager communications; the high cost of credit facilities; the burden of taxation, particularly of surtaxes in large parts of the country; an uneconomic system of land tenure; and a tradition that gives an artificial stimulus to excessive population.

The National Government, since its inception in 1927, has taken some steps to remedy these conditions. Many surveys have been made and foreign specialists consulted, but the Government has been unable to bring improved methods to the attention of the farmer and furnish him with the necessary aid through cooperatives and government action to get him to adopt them on a substantial scale. During the war work along these lines of improvement was continued in unoccupied areas but necessarily had to be restricted, mostly to emergency war efforts. Recent information indicates that the Chinese Government in its post-war program will endeavor to attack the basic problems of land and taxation reform, improve communications, and rehabilitate industry affecting agriculture.

The potentially increased output of China's agriculture is difficult to estimate without detailed study by a staff of specialists. There is no doubt, however, that with possible organization, the output per man and per unit of area can be materially increased and quality measurably improved. Considering the limitations, it is surprising that China has been able in the past to produce such a volume of agricultural products for export.

Investigations of social and economic factors affecting agriculture since the National Government came into power have shown the great difficulties under which the tenant and small landowner have labored. Rents of from 45 to 60 percent of the produce were not uncommon, and other exactions in the form of presents and deposits not recovered were added.

Closely related to the problem of tenancy is that of the small size of holdings. The farmer in many cases cultivates a number of diminutive pieces of land, often of inconvenient shapes and situated at some distance from each other.

After the burden of land tenure comes the land tax. The tax is generally based upon an ancient assessment, which in the course of time has become obsolete. The tax itself may be moderate, but it is increased several times by the imposition of surtaxes. Though the landowner is legally responsible for it, the tax appears in many

cases to be paid in whole or in part by the tenant. The total tax, on the average, would not be unbearable if equitably distributed, but large-scale evasion and extortion are shown by reports. With an efficient system of collection, it is believed that reduction in rates could be made and revenue maintained or increased. Since the land tax is the main system of provincial revenues, administrative reforms contemplated by the Central Government may improve tax-collection methods. However, a large-scale survey of land ownership, kept up to date by registration, may be necessary. Of equal importance to the equitable collection of taxes is a better accounting of their expenditure, so that the taxpayer may know they are going for public improvements, such as education, roads, public health, etc., and not being wasted locally or for the maintenance of private armies, useless officials, etc.

The Land Act of 1930, consisting of 400 articles, covered nearly all aspects of needed reform, but it represented a goal rather than a code of actual practice. It provided for a definite system of rent and security to the tenant. Increase of crop produce, due to improvements, was not to be counted in the calculation of the landlord's share. Provision was made for rearrangement of strips of land into compact holdings. The law also provided for an improved system of land tax, including a periodical assessment with an allowance made with respect to improvements.

The lack of adequate credit facilities has been a continuous handicap to agricultural production and marketing in China. The peasant's capital is small and his income too meager to permit him to save. Usurious rates of interest in China have been forced on the peasant by the gentry, merchants, professional moneylenders, pawnbrokers, and farmers themselves. One of the commonest forms of loans is that of short-term credit on crops, for which the farmer pledges his prospective harvest at heavy rates of interest. Something has been done in a small way to remedy this situation, but the evil still widely persists.

In addition to burdensome taxation and difficult land-tenure conditions, the farmer in many cases has to contend with an enormous discrepancy between the prices that he can obtain locally and actual prices in the large towns. Official figures received in 1933 showed that the differences between prices paid to Kiangsi farmers for produce sold and the prices charged to consumers in Shanghai amounted to no less than 100 percent. When, on account of a famine, it was necessary to move wheat in Shansi Province by ordinary transportation, it was found 40 times as costly as it would have been by railway. The question of middlemen's profits and improved transportation is apparently an important problem. It is fair to say that, next to reforms in the three fields of land tenure, taxation, and credit, improved transportation by rail, motor roads, and waterways would yield the best returns on agricultural resources to the operator of land in China and to the country.

Floods are perhaps the worst natural calamities that periodically affect China. The country to the south of the Yangtze is mountainous, and the rivers in that territory give little trouble. But in North China the rivers, after taking their rise in the loess highlands of the northwest, flow across an immense plain to reach the sea. In the course of centuries they have washed down great quantities of silt and have formed beds that are higher than the surrounding country and can, therefore, be kept from overflowing only by means of dykes. In Central China, though the quantity of silt carried by the Yangtze is not nearly so great, conditions are not dissimilar. The bed of the Yangtze is not deep enough to accommodate the water flowing into it after a period of abnormally heavy rainfall. Its tendency, therefore, is to spread over the whole of the neighboring plain. The catastrophic flood of 1931, affecting 25 million

people, is an example of this menace. In a country so situated, water conservancy is of great importance.

An enumeration of China's rural problems should not omit that of health. With a death rate probably more than twice that of Western countries, the effect on the efficiency of the people is indicated. Three-fourths of the unnecessary deaths result from, it is estimated, the increased incidence of gastro-intestinal diseases, pulmonary tuberculosis, and the infectious causes of infant mortality (tetanus, smallpox, diarrhea). To meet these high rates of sickness and death, the available medical facilities are most meager, because modern medicine in China is of comparatively recent growth. With 85 percent of the population living in rural areas, a large number are incapable of paying for private medical care if available. It becomes, therefore, largely a problem of the Government to provide necessary medical and health facilities under state auspices.

In connection with general rural-health problems, diet deficiencies in China require special attention. Each year large numbers of people suffer from lack of food as a result of poor crops and transportation and distribution difficulties affecting access to surplus areas. In addition, general deficiencies in necessary vitamins are widespread because of the low production of certain foods and the poor methods of preparation and handling of available food products. Deficiencies are particularly marked in calcium and vitamins B_1, A, and D. Attention has been especially called to lack of correct food for children in many areas.

RECOGNITION OF CHINA'S AGRICULTURAL PROBLEM BY THE NATIONAL GOVERNMENT

Fundamental promotion measures for general agriculture in China received little support from the Chinese Government until 1928. As soon as the National Government had consolidated its foundation, it began to carry out plans for the reconstruction of the country.

General conditions of rural progress in China and the application of remedies available were recognized by the National Congress on agricultural economics held in December 1929. A Ministry of Agriculture and Mines was formulated in January 1930, and a comprehensive program was laid out in 1930 in agreement with the Ministries of Communications, Railways, and Education and the National Reconstruction Commission.

Significant progress was made along certain lines, especially in the improvement of cotton and wheat, the expansion of experiment stations, granaries, and cooperatives, and the building of dykes for flood prevention and canals for irrigation. Statistical surveys relating to agricultural production, as well as agricultural education and research, were pushed. Some development occurred in making available to farmers credit at rates lower than former exorbitant ones. Certain unjust taxes were abolished or scaled down. Control measures retarding the movement of farm products were abolished, and tariff rates were revised to protect domestic products and industries related thereto. Bureaus for the inspection and testing of commercial commodities were established for standardizing and grading export products, and a new set of uniform weights and measures was enforced to supersede the old ones. In 1936 the largest total agricultural production in recent years was experienced; this was contributed to by the general agricultural-improvement measures and the effect of political stability. When it is considered that only a start had been made in many lines of agricultural improvement, results were very encouraging.

EFFECTS OF THE SINO-JAPANESE WAR ON AGRICULTURE IN CHINA

The strenuous efforts under way for 10 years were rudely broken into by the Sino-Japanese war. Military operations affected large numbers of the rural population and resulted in great difficulties in carrying on normal cultivation of the land in extensive areas. Industries closely related to agriculture, such as cotton spinning, flour milling, and silk reeling, suffered seriously. In order to cope with the conditions arising therefrom, the Chinese Government found it necessary to adopt a great variety of emergency measures, particularly those having to do with the production and distribution of foodstuffs.

Extension of hostilities in subsequent years turned a great portion of the country into occupied and combat areas. These included the eastern half of Inner Mongolia, North and Central China, and parts of South China. Although many of the rural districts in these areas remained under Chinese control, agricultural-improvement measures under such conditions were of little significance.

The Government site was removed to Chungking along with various institutions connected therewith, including national organizations having to do with agriculture. As already indicated, agricultural policy had to address itself chiefly to emergency needs.

FORMATION OF THE MINISTRY OF AGRICULTURE AND FORESTRY AND POLICIES ADOPTED

At the end of 1939 the Supreme National Defense Council of China decided to create a separate Ministry to be known as the Ministry of Agriculture and Forestry. This started functioning on July 1, 1940. In addition to this body, which brought together the chief governmental functions related to agriculture, a number of organizations were set up dealing with agricultural affairs, and others continued to function along previous lines. Some were in other Ministries, and some were separate organizations under the Executive Yuan. The organization and function of many agencies in the National Government having to do with agriculture have changed somewhat since 1939. The principal research agency, however, continues to be the National Agricultural Research Bureau in the Ministry of Agriculture and Forestry.

The Ministry of Agriculture and Forestry is now making a strenuous effort to realize a material increase in food production in 19 Provinces with Szechwan as the leading producer. The administrative machinery handling the matter is the Food Production Increase Commission of this Ministry, with the assistance of the Central Agricultural Research Bureau and the Central Animal Husbandry Research Bureau. Provincial reconstruction commissioners are appointed superintendents for the execution of measures to increase food production and they have two deputies. One of the deputies is head of the provincial agricultural-improvement institute and the other is appointed by the Ministry of Agriculture and Forestry to take charge of the technical side of the matter and to represent the Ministry in his Province. County magistrates are responsible for the work in their respective districts, with the chief of the reconstruction department and the director of the agricultural-promotion institute as assistants. Students of agricultural and animal-husbandry schools are requested to participate in the movement by rendering technical help. The National Agricultural Production Promotion Commission, which carries out extension activities, is under the Executive Yuan.

The administration of farm loans is placed in the hands of the Joint Board of the Four Government Banks. A rural finance department was created by the Board in the spring of 1940 to coordinate the work of the four financial agencies handling rural

credits; namely, the Farmers Bank of China, the Bank of China, the Bank of Communications, and the Central Bank. The Farmers Bank of China has extended the largest number of agricultural loans since January 1941, when the rural-credit department was transferred to the Bank from the Agricultural Credit Administration of the Ministry of Economic Affairs. The chief loans extended in the past few years have had to do with rural rehabilitation through increasing food production, developing irrigation projects, promoting land reclamation, and strengthening rural handicrafts and industry.

In addition to the loans extended by the Joint Board of the Four Government Banks, the provincial administrations have granted important irrigation loans for the purpose of increasing food production. The Joint Board of the Four Government Banks has decided to make more government loans for this purpose. There are nearly 400 cooperative banks throughout the country. Besides the Joint Board of the Four Government Banks, organizations rendering financial help to the cooperative banks include the provincial banks and the provincial cooperative banks. China's rural financial system is, therefore, to be established on a cooperative basis. Credits will be given only to cooperatives or farmers' organizations that are soundly organized. The National Cooperative Administration registers both the agricultural and the industrial cooperatives.

Under the Commodity Control Administration, the Agricultural Credit Administration has charge of the purchasing and distribution of cotton and cotton goods and the spinning and weaving of native cotton.

The establishment of the National Land Administration by the National Government in June 1942 is a concrete measure to help tenant farmers as a step toward realizing Dr. Sun Yat-sen's policy of the equalization of land ownership. The first task of this new organ is to complete land survey and registration throughout the country and to protect the tenant farmers and those who till their own land. Another organization recently created to help tenant farmers is the Land Finance Department of the Farmers Bank of China, which has practically undertaken the work of a full-fledged land-credit bank. One of its major tasks is to give the small farmers loans with which to buy land. The loans may be given either to the Government, so that it can enable more farmers to till their own land, or directly to the farmers themselves to buy land or redeem mortgages on the land they have.

The Provincial Agricultural Institutes, which have to do with all lines of agricultural improvement in the Provinces, are very important, especially the one in Szechwan Province. The National Water Conservancy Commission, under the Ministry of Economics, and the Provincial Farm Irrigation Committees are concerned with irrigation, which is important in connection with agricultural production.

The agricultural policy formulated for districts nominally occupied by the Japanese but virtually controlled by Chinese soldiers or guerrillas was that of self-sufficiency and the avoidance of producing crops that would aid the Japanese, such as cotton, tobacco, etc. The Central Government extends to these areas any relief, or aid, that is possible, but under prevailing conditions and demands in Free China little can be done.

Under the plan for unoccupied China crops of staple foodstuffs, cotton, and oilseeds were stressed. Labor and meat animals were to be multiplied. Although the suppression of opium in the back Provinces resulted in an increased area of winter food crops, winter plantings of crops on land formerly fallowed were also encouraged. Subsidiary industries were promoted to augment supplies of daily necessities formerly imported. Granaries were increased to conserve food supplies. Steps were taken to

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transport products from surplus to deficit areas and measures were taken to prohibit speculation and hoarding. Export products, such as tung oil, hog bristles, etc., were encouraged where possible in view of transportation difficulties and narrowing of outlets. Scientific farming measures were continued, not only for their current but for their long-time effect. The National Agricultural Research Bureau carried on studies in seed selection and better methods of cultivation, with special reference to rice, wheat, cotton, and tobacco, improvement of farm implements, and control of insects and plant diseases.

A most important development in the agricultural program had to do with the introduction of a modern granary system. By the fall of 1939 the Ministry of Economic Affairs had already established 92 such granaries. In the old days nearly every hsien (county) in China had a barn in which grain purchased by the Government was stored against a famine.

Education and public health were given some attention in the program through a special education committee under the Ministry of Education. The guiding principle of China's agricultural-education policy is that of adaptation to local conditions as much as possible. Agricultural vocational schools are to be increased, the function of which will be to teach farm youth new methods of farming. An endeavor to overcome illiteracy so the people can have access to knowledge to improve their position will be made.

The importance of improving health generally in China was recognized in the formation of the National Health Administration. This organization has a number of different departments and also supervises several subsidiary organizations. In 1940 it was placed directly under the Executive Yuan. While medical facilities are now meager compared to the problem, considerable progress has been made, and it may be fairly said that the necessary experimental stage has been completed and the foundations of the future national health system have been firmly laid. The national health system was originally planned as a network of hsien (county) health centers grouped around a series of provincial hospitals. However, this plan is only an intermediate goal, since it represents only one-fifth of what the ideal should be, according to Western standards calculated on the number of hospital beds which should be provided.

The National Institute of Health at Chungking is paying particular attention to research in food problems, including food analysis. Some dietary surveys have been made, but they are at present confined to people connected with the Government administration.

RECENT VIEWS ON AGRICULTURAL AND RELATED MEASURES OF POST-WAR RECONSTRUCTION FROM CHUNGKING

Recent views of responsible Chinese in Chungking on post-war adjustments strongly emphasize the necessity of agricultural reform. It is significant that one of the main aspects stressed is a thorough revision of many of the faults and abuses of the age-old tenancy system. Great difficulties are anticipated in reform of land tenure and taxation, but it is recognized that these must be overcome or efforts to improve effectively the quantity and quality of production will be continually handicapped.

Immediate steps will be taken after the war for far-reaching development of the transportation system, involving the rehabilitation and extension of railway lines, which will affect agriculture greatly. Development of motor highways as feeder lines for railroads and waterways is to be continued on a large scale.

Plans for the development and rehabilitation of the manufacturing industry, with reference to those units that largely use China's agricultural raw materials - cotton, wool, silk, tobacco, etc. - are particularly important. These are yet in their initial stages, according to latest reports. The usefulness of industrial cooperatives in this connection seems less than previously assumed by promoters of this movement.

One of the greatest questions of all, directly affecting the economic health of agriculture in China immediately after the war, is the stabilization of the currency following wartime inflation. It will be difficult to retrench state expenditures with all the demands of reconstruction above cited.

Agriculture in China will be much affected by the manner in which demobilization of the armies is carried out. It is encouraging to note that the necessity of agricultural reforms is considered as prerequisite to large-scale demobilization. They will both, of necessity, have to proceed slowly. Furthermore, there are many tasks that the army can perform in the direction of reconstruction, such as dyke repairing, road building, and reclamation work.

In order to carry out detailed agricultural reforms, the cooperation of the hsien (county) magistrates is extremely important. The Central Government recognizes that a type of magistrate better trained in administration, with a sympathetic interest in the peasant, would have tremendous influence in improving agricultural production and the welfare of the farmer. The main outlines of general administrative reform are assuming shape in the direction of dividing the country into units that will be more related to economic and communication factors than the historical provinces. Progress in this direction must necessarily be slow until trained personnel is available.

If these administrative and land reforms are vigorously pushed, as now seems to be the intention of the Central Government in its post-war program, the door to a new era in Chinese history will be opened. With such basic reforms initiated and some outside aid on agricultural problems, the vast energies of the rural people can be released so that improvements in production will go on with greater speed and China can make the desired contribution to world economic post-war reconstruction.

AGRICULTURAL-RECONSTRUCTION MEASURES IN WHICH THE UNITED NATIONS MAY LEND AID TO CHINA

It is important in an agricultural country like China that improvement in agriculture should have its proper place along with any plans for expanding industry. The plans of the Central Government of China recently announced indicate that it is becoming more alive to the essential needs of agricultural improvement in post-war reconstruction programs but that outside aid is needed to make the desired progress. Some advance has already been made in helping China in its work on these problems and much more can be done.

In the reconstruction of agriculture after the war, foreign aid will be of most use to China along the following lines: (1) the lending of agricultural specialists and engineers, the former for crop and animal improvement and insect- and disease-pest control, the latter for water conservancy, factory development, and road building; (2) supplying emergency food to devastated and destitute areas after the war; (3) collaboration in setting up a coordinated reconstruction agency; (4) aid in stabilizing the currency; (5) loans for road machinery and factory equipment for processing agricultural products; (6) encouraging serious and qualified research students to study in America and other countries, especially of the Pacific; (7) assisting China in

taking a census of population and production; (8) aiding in the problem of diet and health improvement for the masses; (9) aid in rural-cooperation measures for provision of credit and other economic and social needs of the farm population.

A start in such aid to China has already been made, since the United States Government has sent or is about to send agricultural specialists to China. Among these are specialists in plant and animal breeding, the combating of plant and animal diseases, soil erosion, and water conservancy. Others who might help in advising on the best utilization of agricultural resources for the post-war period might include a fruit specialist to improve the production and marketing of fruit, an extension administrator, and specialists for food processing, textile manufacture, rural health, nutrition inspection and testing, and rural transportation, should the Chinese Government express a desire for such advisers.

A substantial amount of survey material on land utilization and agricultural economic data on China has been made available in recent years, but the war has changed conditions materially in many provinces, particularly those occupied by the Japanese. A census of China, which has long been needed, would provide up-to-date data of great value to be used for basic reconstruction work, particularly for agriculture but also for the general welfare. Experienced men in agricultural-census work would be able to help China considerably if such a project is undertaken.

The sending of students to America and other countries, including the Pacific countries, for agricultural training will, it is hoped, continue to be encouraged. Larger numbers could be sent for postgraduate work and experience after they had some study and field training in agriculture in China. The efforts of such students should be directed along lines of most use to China so that they can be of maximum value to China when they return. In the past it has been found that students have sometimes wasted effort and not found suitable placement on return. The China Institute in New York is an organization that can help much in this matter, with necessary support and cooperation in America and China.

The problem of river control and irrigation has been worked on for centuries in China, but there is great room for improvement. The question as to how far these measures can be extended by modern engineering resources is a very technical one. It is agreed that areas periodically threatened by disaster could be substantially reduced. Dykes, which were damaged by military operations and not sufficiently repaired because of unsettled conditions and lack of labor should be built again as soon as possible after the war. In West China improvement works are already in progress on a relatively small scale. The belief is that the United Nations could render technical aid if engineers having experience with large-scale flood control in the United States could be loaned to China following the war. The work of the China International Famine Relief Commission supplies an example of what can be done in a preventive way. Wells have been dug and canals constructed, which have made more secure the livelihood of great numbers of the rural population of North China.

Technical assistance to help China rehabilitate and expand its textile industry after the war would help agriculture and the general economy of the country considerably. The larger problems of agricultural marketing and storage related to industrial development will be linked with the policy on location of industrial units, which is still unsettled.

Inspection and testing of commercial commodities, such as the work done in Shanghai and Tientsin, should be revived and expanded so that more uniform products can be supplied to the market and suitable premiums paid to encourage the production

of products of higher quality. Foreign advice on these matters would undoubtedly be helpful.

Some important research work has been done, and a few organizations have worked on the problem of feeding low-income groups and children. The problem remaining is vast and complex and requires the combined work of agriculturists, nutritionists, and administrators. Nutritional instruction and demonstration work is a necessary part of the general program of health, education, and recreational centers for rural areas advocated by the League of Nations Mission and the National Health Administration in 1933. Foreign specialists, experienced in rural extension dietary work, can aid in advising on this problem.

During and immediately following the war there will be a need for foodstuffs in many sections of China suffering through poor crops or the requisitions of the invader. To some extent this can be supplied by foreign relief, but the amount will be most limited by transportation facilities. Wheat, flour, rice, and soybeans will be some of the most important items, with probably small amounts of dairy and meat products and some special vitamin concentrates for acute deficiency cases.

As fast as the Japanese are driven from present occupied areas of China, the programs in agricultural improvement above mentioned are expected to be expanded to include such areas. The speed of such development, however, will depend largely upon how fast and how thoroughly the power of the Central Government can be established in the different states. A reasonable supposition is that this will, in any event, take some time.

Along with political stability must come stability of currency, which many think will be a paramount problem after the war. Stabilization of the currency will be much needed as a basis for improvement in the condition of agriculture in China. Farmers have been suffering for some time past because of the low and uncertain purchasing power of their money. If confidence is established in some medium of currency, the incentive to expand and improve production of cash crops will be much stronger.

The assistance of the United Nations in some form of stabilization may be needed. In addition, if credit agencies can be expanded as soon as possible to finance the purchase of seed and fertilizer, agricultural rehabilitation and revival of full production will have a strong impetus at the beginning of the post-war period. If this is achieved, China's financial position will receive much-needed support.

In setting crop-improvement and production goals in China, it will be necessary to consider the increased requirements based upon an improved consumption standard for the population. This involves consideration of products that can best be exported and those that can be procured to better advantage from abroad, particularly from nearby countries where similar reconstruction programs may be worked out.

CONCLUSION

China's agricultural problems are vast and complex, but they must in a large measure be solved before the country can make the desired contribution to post-war world economic reconstruction. The speedy rehabilitation of agriculture, especially in areas now occupied, and initiation of fundamental reform measures are necessary to stabilize political conditions in post-war China.

In the post-war period agriculture must strive to get in position as soon as possible to furnish most of the country's food on a higher level than the low pre-war one. It must raise its exports to at least the pre-war level and furnish more raw products for an expanding industry. In many cases manpower for industry must also be

taken from the farms. Because of the calls upon agriculture to furnish most of the sinews of the country's reconstruction, it is evident that agricultural economy must be strengthened along with any large-scale industrial development. A top-heavy superstructure of industry cannot be built in China upon a shaky agricultural foundation.

The Central Chinese Government, after its inception in 1927, realized the necessity of agricultural improvement and for a short time made some notable advances in organization to cope with the problem. Its efforts were rudely broken into by the Sino-Japanese war in 1937. Since then most of its activity has had to do with wartime emergency measures. The Chungking Government is now awakening to the need of actively pushing agricultural-development measures in preparation for post-war reconstruction. It has asked the United States Government for a number of specialists for conservation and production work in China; those who have arrived in China have met a cordial reception; and mutual working arrangements are being rapidly formulated. This start on improved production-development measures is most encouraging, but the more basic economic measures having to do with land and taxation reform have, in a large measure, yet to be faced. With such basic reforms initiated, along with aid on specific problems, the vast energies of the rural poeple will be realized, and production can respond to its fuller potentialities.

Foreign specialists who have the opportunity to work in the rehabilitation and improvement of China's agricultural organization are impressed with the possibilities of the situation. They realize that such contacts with our Ally, in addition to technical benefits on both sides, will promote an understanding of each other's problems and a deeper appreciation of each other's general culture and attainments.

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AGRICULTURE IN THE IRANIAN (PERSIAN) TRADE AGREEMENT . . . . .

By Clayton E. Whipple*

In order to promote trade between the United States and Iran during the wartime emergency and to encourage an expansion in the exchange of goods after the war, the two countries signed a reciprocal trade agreement on April 8, 1943. Trade between the United States and Iran has shown a strong upward trend since its decline in the depression years of the 1930's and has gained in value since the outbreak of the war. Gums, nuts, and handmade articles, such as fine Persian rugs, have been outstanding among Iran's exports to the United States. Industrial goods have accounted for the bulk of the goods shipped by the United States to Iran.

SIGNATURE OF TRADE AGREEMENT WITH IRAN

A trade agreement between the United States and Iran was signed in Washington on April 8, 1943. The agreement enters into force 30 days after completion of the necessary formalities by the Government of Iran, proclamation of the agreement by the President of the United States, and exchange of the appropriate instruments by the two Governments. It will remain in force for a period of 3 years from its effective date unless terminated earlier, under special circumstances.

The agreement is designed to facilitate trade between the two countries during the existing emergency, insofar as shipping and other wartime conditions permit, and to provide a basis for expansion of trade between the United States and Iran after the war. The specific reciprocal benefits for which it provides include tariff reductions and bindings of existing customs treatment by each country on specified products imported from the other, whereas the general provisions of the agreement give important assurances, among other things, against discriminatory tariff, quota, or exchange treatment by either country of imports from the other.

Trade between the United States and Iran has increased in recent years. Trade between the two countries, according to United States data, totaled $11,078,000 in 1929 and, after falling sharply during the depression years, rose to $12,364,000 in 1938, and in 1940 amounted to $15,113,000. For the whole period 1929-1940, United States exports to Iran were valued at an annual average of $3,942,000 and United States imports from Iran at $4,824,000 a year.

Automobiles and trucks, tires and tubes, lubricating oils and greases, and machinery normally constitute about 70 percent (85 percent in the fiscal year 1939-40)[1] of total Iranian "commercial"[2] imports from the United States. Imports of American agricultural commodities are relatively of minor importance.

United States imports from Iran are largely typical Iranian handicraft products, among which Persian rugs are the most important. Gum tragacanth, certain nuts, and various furs are also significant items in the trade.

* Office of Foreign Agricultural Relations.

[1] The Iranian fiscal year begins on March 22.

[2] Imports into Iran of commodities for the use of certain organizations are exempt from the payment of duties. They are not included in the Iranian statistics of imports, and are referred to in Iran as "noncommercial" imports. The Iranian trade figures cover only "commercial" imports, that is, other than those just described; United States export figures cover both.

ANALYSIS OF THE AGREEMENT

Concessions Obtained by the United States

Commercial imports into Iran from the United States of products on which concessions were obtained, were valued for the fiscal year 1939-40 at $1,832,000, or 84 percent of total Iranian commercial imports from the United States in that year. In addition, the Iranian road taxes on items included in Schedule I, which covers concessions on imports into the country, are bound against increase by the terms of article VI of the agreement. These road taxes were levied by Iran in 1931 on all its foreign trade. Under the present agreement, the United States is assured of nondiscriminatory treatment in the application of all Iranian foreign-trade and exchange-control measures.

Concessions have been granted by Iran to the United States on a number of agricultural items. The duty of 4 rials[3] per gross kilo (about 10 cents per pound) on canned asparagus is removed by the agreement, and the road tax of 5 rials per gross kilo (12 cents per pound) is bound against increase. The reduction in the combined tariff rate and road tax amounts to 44 percent. Likewise the duty of 3 rials per gross kilo (7 cents per pound) on canned fruits is removed, and the road tax of 5 rials (12 cents) is bound against increase; the reduction in the combined rates amounts to 38 percent. The import duties and road taxes on fresh and dried apples and pears are bound against increase.

Formerly, the Iranian market for United States foodstuffs was limited, the total value of Iranian imports of American agricultural products enumerated above having been about $14,600 in 1939-40 and $9,800 in 1940-41. A growing interest is being manifested, however, and any increase in purchasing power within Iran brought about through the program for economic improvement, now being developed with the aid of American advisers, will probably be reflected in larger imports of such products.

Concessions Granted to Iran

Iranian products imported into the United States, on which concessions are made in the agreement, were valued in 1939 at $4,267,000, or 95 percent of the value of total United States imports from Iran in that year. Of this amount, approximately $2,289,000 or 54 percent of the total is accounted for by products on which duties are reduced in the agreement or bound against increase, and the remainder is accounted for by Iranian products for which the existing duty or free status is bound.

The following items were bound at previous rates or on the free list:

Item	Rate	Value of United States Imports 1939	1940
		1,000 dollars	*1,000 dollars*
Pistache nuts not shelled	1¼ ¢ per lb.	157	88
Shelled	2½ ¢ per lb.	4	-
Asafetida, crude	free	7	6
Bristles, not sorted or prepared	free	-	-
Quince seed, crude, nongerminating	free	61	117
Saffron	free	-	-
Madder	free	-	-
Furs and fur skins (total)	free	481	1,999
Gum tragacanth	free	1,195	1,447
Gum natural, n.s.p.f.	free	11	12
Sausage casings of sheep, lamb, and goat	free	205	926
Cummin seed	free	1	30

[3] Conversion rate used for Iranian import values for 1939-40: 1 rial equals $0.0545.

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The rates on dates and almonds were unchanged, although for dates with pits they were bound at the former levels of 1 cent per pound, or 30 percent ad valorem, and for dates with pits removed at 2 cents per pound, or 53 percent ad valorem. United States imports of dates during 1940 were valued at $92,000. No action whatever was taken with respect to almonds.

Duties were reduced on the following items:

Item	Rate per Pound		Value of U.S. Imports	
	Before Agreement	After Agreement	1939	1940
	Cents	*Cents*	*1,000 dollars*	*1,000 dollars*
Barberries	2.5	1.25	(1)	(1)
Apricot and peach kernels	3.	2.5	-	1
Hair of Cashmere goat:				
In grease or washed	34.	18.	(2)	9
Scoured	37.	21.	-	-
On skin	32.	16.	-	-
Sorted or matchings not scoured	35.	19.	-	-
Opium:[3]	*Dollars*	*Dollars*		
11-percent	3.00	1.98		
14-percent	3.00	2.52		

[1] Not available.
[2] Less than $500.
[3] Under the agreement, the rate must be not less than $1.80 nor more than $3.00, depending upon anhydrous-morphine content.

The importation of opium into the United States, as well as its processing and distribution within this country, is strictly controlled by the Bureau of Narcotics of the Department of the Treasury. A change in the rate of duty is therefore not expected to have any great effect on the total volume of trade. The rates on opium are calculated on the basis of $18.00 per pound of anhydrous morphine contained therein. Since 1930, when the former rate on opium was fixed, the ad valorem equivalent of the $3.00-per-pound rate has varied between 64 percent and 142 percent. Most opium imported into the United States has contained from 10 to 14 percent of morphine. Iranian opium, usually containing about 11 percent of morphine, was consequently under some competitive disadvantage as compared with the more concentrated product. Under the agreement this competitive disadvantage to Iranian opium is removed without discriminating against other supplies.

A note from the Iranian Minister, signed in connection with the agreement, states that it has been explained (1) that it is the policy of the United States Government to issue permits for the importation of opium only from countries that have established systems of import permits and export authorizations at least equivalent to that described in the International Opium Convention signed at Geneva on February 19, 1925, and (2) that in accordance with this policy the issuance of permits for importation of opium into the United States from Iran will depend largely upon the measures taken by the Government of Iran for effectively controlling traffic in opium. The Iranian Government, in full accord and sympathy with the international efforts to suppress contraband traffic in opium, declared its intention to establish at an early date any additional regulations needed to confine the trade in opium produced in Iran to legitimate international channels. Thus the agreement contributes considerably to the solution of a fundamentally important international problem.

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FRENCH FOOD RATIONING . . . . .

By Lois Bacon*

Food rationing in France has failed to bring about a reasonably fair distribution of the reduced supplies available. Largely because a considerable amount of food escapes control, national rations have had to be much smaller than would otherwise be the case, and they are not always even legally available in all parts of the country. Thus, the burden of restricted consumption has fallen on those in urban and deficit rural areas who are seldom able to supplement rations illegally in one way or another.

Rationing of food by coupon in France began shortly after the invasion and defeat. Alimentary paste, rice, sugar, and vegetable oils were the items first affected, under a decree published August 2, 1940. The list was extended in September 1940 to include whole milk, bread and flour, meat, cheese, animal fats, and coffee. Since then, most other foodstuffs have also been rationed either nationally or locally.

Changes in national food rations, as specified in the rationing orders which came to be issued regularly each month, are shown in the accompanying table. In the beginning, these rations indicated the quantities to which the consumer was legally entitled. That they were not always fully available everywhere was soon recognized officially by a provision which authorized supplements of certain rationed foods in certain centers of consumption in case of grave insufficiency in the supplies of other rationed foods.

Maldistribution had to be expected, not only during the early months of rationing when disorganization of the national economy was still serious, but also after conditions had become more settled. Agricultural production in 1941 and 1942, though above the low 1940 level, remained well under the pre-war average; and, while some imports continued to arrive from French African possessions, exports in the form of German requisitions were considerable. A fair division of the reduced supplies available would have necessitated a substantial restriction of consumption of the relatively large farm population, which is always difficult to control. Diversion of food from official channels of distribution all along the line was also stimulated by high black-market prices. Transfer of supplies from surplus to deficit areas was sometimes hindered by the reluctance of local authorities to deplete local stocks, not to mention acute transportation difficulties. The Government, lacking the power to enforce its regulations, could collect only part of available supplies. Equitable distribution of collected supplies among all the population meant inequitable distribution of total supplies. Farm dwellers as a whole and those who could afford to pay black-market prices, or in some way secure food from peasants, have benefited at the expense of the less well-to-do in urban and industrial areas, and surplus regions have been better off than deficit regions.

By the summer of 1941, bread and meat rations (see table 1) had already been so sharply reduced that annual ration requirements were well under available supplies in the season 1941-42. The small fat and cheese rations, increased in the late spring and summer of 1941 and then lowered to the original level, could also have been filled

* Office of Foreign Agricultural Relations.

and still have left a substantial proportion of available supplies unaccounted for. Yet the rationing orders indicate difficulties in maintaining even these rations over the country at large. As from June 1941, food rations published in the orders were termed "basic." Two months earlier it had been provided that bread rations could be reduced in departments where supplies were insufficient. This provision was broadened to cover all basic rations in March 1942, and was specifically referred to as a reservation in fixing basic rations in the following months.

While giving legal sanction to local reductions from basic rations, the Government also attempted to bring about a more equitable distribution of meat by increasing the share of urban communes in collected meat supplies. Prior to the order of October 16, 1941, which modified the method of allowing for home slaughtering for family consumption, regulations required declaration of such slaughterings, on the basis of which coupons were extracted from meat-ration books. Effective November 1, however, all persons residing in rural communes were considered able, unless they certified to the contrary, to benefit from permitted home slaughtering and were entitled to a book of meat coupons worth less than the basic ration; persons living in urban communes could also be authorized to raise and fatten pigs for family consumption, in which case they also received the reduced coupon ration. In January 1942, the reduced coupon ration was fixed at 125 grams[1] per week, the basic ration being considered as 250 grams. In the same month the basic ration for those not benefiting from home slaughtering was cut to 180 grams per week, but as from March 1942, it might be raised to a maximum of 250 grams in urban communes.

Basic rations showed little change during the summer and fall of 1942. In December, however, basic fat rations were cut from around 100 to 72 grams per week, and in January 1942 the (presumably coupon) ration for rural communes was lowered to little more than 52 grams per week. Reports also state that the basic meat ration of 180 grams was reduced to 120 grams in April 1943. No information is available regarding present meat rations for rural communes. Furthermore, the possibility of a cut in basic bread rations is being discussed, as it was in the spring of 1942, when France could still rely on North Africa to help bridge the gap between wheat harvests.

A deterioration in the French food situation following the Allied invasion of French North Africa and German occupation of the rest of France is not surprising. Even before these military developments occurred, it appeared that the margin between available supplies and requirements for rations at the level then prevailing would be smaller in 1942-43 than in the preceding season. The loss of imports virtually eliminated the margin for fats. Shipments of most other foodstuffs formed only a small part of total supplies, but they were relatively easy to control and could be diverted to cities and towns where shortages were most acute. While the distress in these areas could have been alleviated by an appreciable curtailment of illegal consumption, Germany's new defensive measures probably gave added impetus to hoarding and black-market operations. Certainly France's inadequate transportation facilities have been put under still greater strain. There seems little prospect of relief, at least until the new harvest, unless the Germans relax their demands on French production.

[1] A gram equals .0022046 pound.

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TABLE 1.—*Weekly average "basic" food rations, France, August 1940 to November 1942*[1]

FOOD	NORMAL CONSUMERS [2]	FARMERS AND FARM LABORERS 21 AND OVER [2]	WORKERS, 21-70 [2]			CHILDREN				OLD PEOPLE EXCLUDING FARMERS AND FARM LABOR
			LIGHT	HEAVY	VERY HEAVY	UNDER 3	3-6	6-12	12-21 [2]	
Bread:	*Grams*	*Grams*	*Grams*	*Grams*	*Grams*	*Grams*	*Grams*	*Grams*	*Grams*	*Grams*
Sept. 23-Oct. 20, 1940	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450	2,450
Oct. 21-Dec. 31, 1940	2,450	3,150	3,150	3,150	3,150	1,050	1,400	2,450	[3] 2,450	1,400
Jan. 1-Jan. 31, 1941 [4]	2,356	3,056	3,056	3,056	3,056	956	1,656	2,356	[3] 2,356	1,656
Feb. 1-Mar. 31, 1941 [4]	2,119	2,819	2,819	2,819	2,819	719	1,419	2,119	[3] 2,119	1,419
Apr. 1-June 30, 1941	1,925	2,450	2,450	2,450	2,450	700	1,400	1,925	[3] 1,925	1,400
July 1-15, 1941	1,925	2,450	2,450	2,450	2,450	700	1,400	1,925	2,450	1,400
July 16-Aug. 15, 1941	1,925	[5] 3,150	2,450	2,450	2,450	700	1,400	1,925	[5] 2,450	1,400
Aug. 16, 1941-Nov. 1942	1,925	[6] 2,450	2,450	2,450	[6] 2,450	700	1,400	1,925	2,450	1,400
Flour, common or special: [7, 8] Aug. 1941-Nov. 1942	-	-	-	-	-	58	58	-	-	58
Alimentary paste: [8, 9]										
Aug.-Oct. 1940	58	58	58	58	58	58	58	58	58	58
Nov. 1940-March 1941	116	116	116	116	116	116	116	116	116	116
April 1941	87	87	87	87	87	87	87	87	87	87
May-July, Oct.-Nov. 1941, Jan-Feb. 1942, Nov. 1942 [10]	58	58	58	58	58	58	58	58	58	58
Rice: [8, 9]										
August 1940	93	93	93	93	93	93	93	93	93	93
Oct.-Nov. 1940	-	-	-	-	-	23	-	-	-	-
December, 1940	23	23	23	23	23	23	23	23	23	23
Jan.-March 1941	23	23	23	23	23	46	23	23	23	23
April-May 1941	46	46	46	46	46	70	46	46	46	46
June 1941	-	-	-	-	-	70	46	46	-	-
July 1941	-	-	-	-	-	70	46	-	-	-
Aug.-Oct. 1941	-	-	-	-	-	46	-	-	-	-
Nov.-Dec. 1941	-	-	-	-	-	76	46	-	-	-
January 1942	-	-	-	-	-	76	46	46	-	-
Feb.-March 1942	-	-	-	-	-	76	46	46	-	46
April 1942-Nov. 1942	-	-	-	-	-	76	46	-	-	-
Sugar: [8]										
Aug.-Dec. 1940	116	116	116	116	116	174	116	116	116	116
Jan.-July 21, 1941	116	116	116	116	116	232	116	116	116	116
July 22-Aug. 31, 1941	145	145	145	145	145	291	174	174	174	174

Sept. 1941-May 1942	116	116	116	116	116	232	116	116	116	116
June-July 1942	116	116	116	116	116	232	232	232	232	232
August 1942	116	116	116	116	116	232	116	116	116	116
Sept.-Nov. 1942	116	116	116	116	116	291	116	116	116	116
Meat:[11]										
Sept. 23, 1940-Mar. 31, 1941	360	360	360	360	360	360	360	360	360	360
April 1941	250	250	[12]306	[12]306	[12]306	250	250	250	[3]250	250
May-December 1941	250	250	250	[12]355	[12]459	250	250	250	[3]250	250
June-April 1942: Urban communes[13]	180	180	180	[12]285	[12]389	180	180	180	180	180
Rural communes[14]	250	250	250	[12]355	[12]459	250	250	250	250	250
May 1942-Nov. 1942: Urban communes[13]	180	180	180	[12]285	[12]389	180	180	180	[12]264	180
Rural communes[14]	250	250	250	[12]355	[12]459	250	250	250	[12]334	250
Cheese:										
Sept. 23,1940-Mar. 31, 1941[15]	50	50	50	50	50	50	50	50	50	50
April-May, 1941	75	75	75	75	75	75	75	75	75	75
June 1941	70	70	70	70	70	70	70	70	70	70
July-Sept. 1941	60	60	60	60	60	60	60	60	60	60
Oct. 1941-Nov. 1942	50	50	50	50	50	50	50	50	50	50
Fats:[16]										
Sept.23, 1940-Apr. 30, 1941	100	100	100	100	100	100	100	100	100	100
May 1941[8]	128	128	128	198	268	128	128	128	[3]128	128
June 1941[8]	123	123	123	193	263	123	123	123	[3]123	123
July 1941[8]	128	128	128	198	268	128	128	128	128	128
August 1941[8]	151	151	151	221	291	151	151	151	151	151
September 1941[8]	122	122	122	192	262	122	122	122	122	122
Oct. 1941-Nov. 1942[17]	100	100	100	170	240	100	100	100	100	100
Chocolate:[8, 9]										
May-July 1941	-	-	-	-	-	-	29	58	58	29
Sept. 1941-Nov. 1942	-	-	-	-	-	29	29	58	58	29
Coffee mixture:[8, 18]										
Sept.-Nov. 1940	70	70	70	70	70	-	70	70	70	70
Dec. 1940-May 1941	58	58	58	58	58	-	58	58	58	58
June-Nov. 1941	35	35	35	35	35	-	35	35	35	35
Nov. 1941	35	35	35	35	35	-	-	(19)	35	35
Dec. 1941-Feb. 1942[20]	58	58	58	58	58	-	-	58	58	58
March 1942-Nov. 1942[20]	35	35	35	35	35	-	-	35	35	35

(For footnotes see following pages)

[1] Includes only those foods specified in the monthly rationing orders issued regularly each month, beginning May 1941. Dry legumes, rationed at the rate of 58 grams per week in January-March 1941, were thereafter dropped from the rationing orders. Whole milk and wine were also rationed nationally. A decree of September 12, 1940, reserved whole milk for children up to 6 (5.25 liters per week), 6-14 (1.75 liters per week) and expectant and nursing mothers and sick people (3.5 liters per week). Under the law of September 13, 1941, and order of August 13, 1942, wine producers could retain a certain proportion of their output for family consumption, and in February 1942 national rations for other consumers except children were established (1 liter per week, reduced to 4 liters per month in November; workers had supplementary rations).

[2] Originally the lower age limit for normal consumers, farmers and farm workers, and workers was 12. It was raised to 14 for workers in December 1940, and to 21 for all three categories in July 1941, when a separate category was established for young people 12-21.

[3] Farmers, farmer workers, and workers of this age group received the same rations as older persons in the same categories up to July 1941.

[4] Includes a supplementary monthly ration of 1,100 grams for January and 80 grams for February and March. Weekly average computed by dividing by 4.3

[5] Includes a daily supplement of 100 grams, which was also granted to youths 12-21 working on farms.

[6] As from September 1, 1942, wheat and rye producers, their relations living on the farm, and workers employed there steadily were given a ration of 15 kilograms a month. As from November 1, 1942, miners were given a daily ration of 600 grams.

[7] In general flour could be obtained only against bread coupons at the rate, up through January 1941, of 80 grams flour to 100 grams bread and thereafter, of 75 to 100.

[8] Monthly ration divided by 4.3.

[9] During the months not specified no rations were granted.

[10] As from March 1942, 250 grams of alimentary paste could, within the limits of supplies available, be obtained each month against bread coupons worth 350 grams of bread. As from June 1942, the exchange could be made only in the latter half of the month.

[11] Containing 20 percent bone. Rations, which originally affected beef, veal, mutton, lamb, pork products, and meat preserves composed entirely of meat, came to cover goat, horse, donkey, and mule meat, and tripe.

[12] Monthly supplement for workers and children 12-21 divided by 4.3 plus weekly ration.

[13] As from March 1942, the regional prefects were authorized, on instructions from the Secretary of State for Supplies, to increase the ration in urban communes up to a maximum of 250 grams per week.

[14] 125 grams of this ration came from permitted home slaughtering for family consumption. See text.

[15] Excludes Christmas supplement of 40 grams available from December 22, 1940, to January 5, 1941.

[16] Vegetable oils and fats, margarine and products derived from tallow were rationed at the rate of 200 grams per month in August 1940. Butter and lard were included in the fat ration as of September 23, 1940. Fat rations of milk producers were subject to special regulations under an order published March 30, 1941.

[17] From October 1941 through November 1942, the rations for 31-day months amounted to 450 grams and for 30-day months to 430 grams (except November 1941 when the ration was 450 grams), which worked out at 14.5 and 14.3 grams per day, respectively, or slightly over 100 grams per week. For February 1941, the rate was 400 grams.

[18] The amount of pure coffee permitted in the mixture was reduced from 23 to 14 grams per week in December 1940, to 10 grams in March 1942, to 7 grams in September 1942, and to little more than 3 grams in February 1943.

[19] Coffee coupon good for 250 grams per month of "petit dejeuners," a special flour with a cocoa content of more than 10 percent.

[20] As from January 1942, the rationing orders fixed the maximum ration, the actual ration being determined locally. As from December 1941, the coffee coupon could be used to obtain either the coffee mixture or a specified quantity of various other commodities, the choice coming to include tea (reduced from 50 to 25 grams per month in March 1942), tea mixture (125 grams per month), chicory (reduced from 250 to 200 grams per month in August 1942), chicory mixture (reduced from 500 to 400 grams per month in August 1942), roasted barley (reduced from 250 to 150 grams per month in March 1942), or "petit dejeuners" (250 grams per month), limited, from March through October 1942 at least, to children and youths 6-21 and old people.

UNITED KINGDOM RATIONING SYSTEM FOR LIVESTOCK FEEDSTUFFS* . . . . .

In February 1941, the feedstuffs-rationing scheme was introduced in the United Kingdom by the Ministry of Agriculture. It was revised in the winter of 1941-42 to provide for further curtailment of allocations of feedstuffs to livestock farmers. Farmers producing enough feed for their own livestock are not involved in the scheme at all.

The plan is mainly a priority system to provide feed for dairy herds in line with the national policy of maintaining or increasing milk production. The War Agricultural Executive Committees have worked to reduce dependence upon purchased feeds by requiring dairy farmers to produce as much feed as individual circumstances permit. In many cases, however, there is a limit to the amount of feed a dairy farmer can produce without seriously curtailing his pastures.

The small surplus left over after dairy needs are met is allocated to other classes of livestock. Pigs and poultry are the chief beneficiaries, since beef cattle and sheep do not get any rations under the scheme and must be maintained by feed grown on the farm. Currently, the maximum number of pigs and poultry for which rations may be purchased is one-eighth the number kept in June 1939, or December 1940, depending upon which date has already been taken for basic figures.

The details of operation of the plan with regard to the actual distribution of the feeds are extremely complicated, since conditions vary tremendously as between individual farms. In mixed farms, for example, the operator may be following the best farm-management practices and yet be seriously handicapped in obtaining the maximum potential feed production of the farm unless exceptions are made in supplying feedstuffs. As a result, there are a large number of exceptions and special allowances for raising cows, maintaining brood sows and breeding ewes, and adjustments for winter milk sale, for pedigreed animals, and for the feeding values of the various types of feed, etc. The War Agricultural Executive Committees are periodically supplied with a small quantity of extra feedstuffs coupons for "hard cases," in dealing with which the enforcement of the scheme would do more harm than good.

In the case of dairy cattle, the rations are based primarily on the amount of milk produced, therefore giving a larger ration to the more efficient producers. The official explanation of the method of determining rations for dairy cattle for the past winter was as follows:

"Rations will be based on milk sales two months previously, but gallonages for August, September and October will be reduced by one-ninth before working out the October, November and December rations. For each 80 gallons of milk sold in excess of 15 gallons per cow per month, the allowance will be 1 unit of protein and 2 units of cereals, subject to a deduction of 48 lb cereals per cow per month; this cereal deduction, therefore, amounts to 3 cwt.[1] of grain per cow for the whole winter. The basis of rationing is equivalent to the producer providing maintenance and the first 7 pints per cow per day, but with some protein substituted for cereals in the rations granted for the remainder of his milk sales.

"Example: If milk sales in August amounted to 1,029 gallons from a herd of 21 cows (including dry in-calf cows), the rations for October would be 7½ units protein and 6 units cereals, arrived at as follows:

* Based on the Appendix by Alton T. Murray, assistant agricultural attache, attached to a report, "The British Wartime Meat Production Outlook," from Loyd V. Steere, agricultural attaché, London, dated December 19, 1942.

[1] 1 cwt.=112 lb. From the calculations given in the example 1 unit of feed is apparently 1 cwt.

Milk sales [August][2] ..... 1,029 gal.
less one-ninth ..... 114 "
915 "
less 15 gal. x 21 [no. of cows] ..... 315 "
600

Protein = $\frac{600}{80}$ = 7½ cwt. [i.e. 1 unit for each 80 gal. in excess of 15 gal. per cow per month]

Cereals = 7½ x 2 = 15 cwt.
less 48 lbs. x 21 = 9 "
6 "

"If a farmer has grown wheat instead of fodder crops, or for other good reason is unable to provide the feeding stuffs necessary for more than the production of the first half-gallon per cow per day, he can apply to his County War Committee - on the form provided - for the monthly cereal deduction (48 lb. per cow) to be cancelled.

"Maintenance and the first half-gallon per day can usually be provided from unrationed feeding stuffs - hay, straw, roots, silage, kale. Only in very exceptional circumstances will rations be provided by the Committee to help towards production of the first half-gallon. In no circumstances can coupons be provided for the maintenance part of the cow's rations."

In the case of hogs and poultry, feed produced on the farm enters the calculation rather roughly, as the following official example offered by the Ministry of Agriculture indicates:

"If a farmer kept 2,400 poultry on 20 acres before the war, last winter he would have got rations for 380 birds, $\frac{2,400}{6}$ - 20. Next winter he will be given rations for 270 birds, that is, $\frac{2,400}{8}$ - 30.

"A farmer who kept 480 pigs before the war on 120 acres of land, last winter would have got full rations for [$\frac{480}{6}$ - 10] or 70 pigs. Next winter he will get full rations for [$\frac{480}{8}$ - 15] or 45 pigs.

"The winter rations will be as last winter - 1 unit per month for 20 birds, and 1 unit per month per pig."

[2] Information in brackets supplied.

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